

PROLOGUE

NASA and Education



In February 1990, President Bush met with the governors of the 50 states to address one of the nation's most urgent problems: the quality of education in the United States, particularly technical education. The President endorsed a package of six goals developed by the governors, among them making the United States first in the world in mathematics and science achievement.

That's a big order. Recent comparisons of science students in industrialized nations show the U.S. at or near the bottom of the list.

The problem facing the nation is succinctly summed in a study conducted by the Aerospace Education Foundation:

"The crux of the technical manpower problem is that too few people in the workforce today have the skills required to function in a technologically advanced society...In the end, this gap,

or deficit, dulls the nation's competitive edge. In the long run, if the technical manpower gap widens and the adverse trends persist, our very economic survival is in jeopardy."

The problem is twofold. First, there already exists a shortage in numbers and it is getting worse; the National Science Foundation estimates that, at current graduation rates, the U.S. will be short more than 700,000 scientists and engineers by 2010. Second, there is a "skill gap" along with the numbers gap; many of the people emerging from the education pipeline are not sufficiently qualified to meet the demands of the high technology workplace today or tomorrow.

All over the U.S., government, industry and academic organizations, individually and in concert, at the national, state and local levels, are accelerating efforts to find remedies for the

educational and training maladies that threaten America's scientific and technological future.

NASA is among the leading education promoting organizations and the agency is expanding its effort. In May 1990, NASA and the Department of Energy concluded an agreement for a cooperative program directed at encouraging more U.S. students to pursue careers in science, engineering and mathematics, and at improving the instructional process in those areas at the precollege and university levels.

NASA's Educational Affairs Division, long engaged in a general program of aerospace education, is broadening its effort. The agency's Technology Utilization Division, which operates a nationwide network of technology transfer facilities, is employing those facilities to foster public awareness of the economic benefits of tech-

nology development, to help teachers improve their skills, and to stimulate interest in science careers among America's youth.

With the cooperation of NASA's nine field centers and 10 Industrial Applications Centers, these units conduct a wide array of educational activities, among them "open house" presentations for students, sponsorship of State Educators Conferences and support of state departments of education, developing fixed and traveling science/technology exhibits, sponsoring student internships, developing science curricula for schools, providing direct support for graduate research, providing educational resources to teachers, and participating in a broad range of seminars, workshops and special presentations. The following pages highlight a sampling of NASA educational activities.

Today, our focus on education in NASA is very broad and it's growing. We have 162 programs starting with the elementary and secondary schools through the university levels. Our outreach to minorities is assisting employment throughout the country, and it's lifting up the general public awareness in science, the environment and technology across America today. We directly touch over six million students and educators. Last year we visited over 2,000 schools, 3,000 classrooms, sponsored 250 science fairs, and assisted 27,000 teachers in school workshops focusing both on math and science.

James R. Thompson
Deputy Administrator, NASA